INEEL Intelligence

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A high-level monthly briefing on operations and activities at the Department of Energy's Idaho National Engineering and Environmental Laboratory – Home of Science and Engineering Solutions. Work at the lab supports the Department's business lines of environmental quality, energy resources, national security and science.

■ ENVIRONMENTAL QUALITY – Russian Technology Tested in Idaho

INEEL and Russian scientists this summer combined their respective robotic and sensing technologies to examine the potential for improving decontamination and decommissioning operations at the INEEL. Those improvements could lead to increased worker safety, reduced costs and shorter project schedules. A remote-controlled robot, ATRV-Jr., developed at the INEEL, carried two Russian-developed technologies – a Gamma Locating Device (GLD) and the Isotopic Identification Device (IID) – in a large scale demonstration and deployment project July 19. The initial demonstration of their combined capabilities was in an uncontaminated laboratory in Idaho Falls. The system was later deployed to assess two contaminated rooms at the INEEL desert site. The U.S. Army Corps of Engineers is now doing an analysis of the test results to compare the INEEL/Russian system to other currently used technologies. The analysis will help determine if the new technologies could improve the success of projects at other DOE and commercial sites.

■ SCIENCE – INEEL Science Again Cited as Among World's Best

Super Hard Steel, developed at the Department of Energy's INEEL, has been recognized as one of the 100 most significant technological achievements of the year 2001 by R&D Magazine. The award-winning coating, created by transforming steel alloy into a non-crystalline metallic glass, can be sprayed onto a wide variety of metal surfaces using conventionally available thermal spray technologies. Once applied, it surpasses existing commercial coatings in wear, corrosion and impact resistance. The INEEL research team behind the technology includes materials scientists Daniel Branagan, Elizabeth Taylor and Joseph Burch, and thermal spray researchers James Fincke, David Swank and DeLon C. Haggard. R&D Magazine has sponsored the international R&D 100 Awards program since 1963. This is the 27th such award for the INEEL and the second for Branagan and Fincke, who won awards in 1999 and 1997 respectively.

■ ENERGY RESOURCES – Team Looks to Expand Geothermal Energy Use

The Idaho Geothermal Working Group is being formed to develop strategies for addressing issues facing geothermal energy development within the state. The group's formation is just one of several actions identified earlier this summer from a two-day Idaho Geothermal Energy Stakeholders Workshop at Boise State University. The workshop was hosted by Sen. Larry Craig in cooperation with the INEEL. Bob Neilson, INEEL renewable energy and power technologies manager, said with today's energy crunch, the timing is right for Idaho leaders to work together to use our home-grown energy. "This is a clean, reliable form of energy that has been barely tapped," said Neilson.

■ NATIONAL SECURITY – INEEL Technology Supports Military and Civilian Needs

The Portable Isotopic Neutron Spectroscopy System (PINS), used by the U.S. Army for the past nine years to determine the chemical contents of weapons, is now helping with cleanup efforts at the INEEL. Instead of rusted, half-buried artillery shells, PINS is being aimed at a several hundred-gallon stainless steel tank left in place when the laboratory stopped reprocessing Naval nuclear fuels. Without opening the tank, PINS assesses whether the tank is full, empty or contains a residue, and confirms the chemical contents. INEEL designers of the award-winning technology plan to modify the field system for use with buried tanks.

Editor's Note: *Intelligence* is part of a new family of publications from the INEEL, and replaces the former *Today and Tomorrow* news brief.

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